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HISTORICAL COMPARISON PHOTOGRAPHY

MOUNTAIN FOOTHILLS
DILLON RESOURCE AREA
MONTANA



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MONTANA STATE OFFICE

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April
1980

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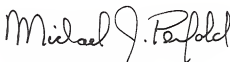
PREFACE

The comparison photography taken from the Missouri Breaks Grazing Environmental Statement provided documentation of vegetation changes over time. That project was so successful that BLM undertook a similar venture for the Mountain-Foothills Grazing Management Environmental Impact Statement in the Dillon Resource Area.

The original photography, which was taken as early as 1884 and as late as 1940, showed a great deal of what the country was like almost 100 years ago.

This comparison photography is most interesting, and not only from a scientific standpoint. A graphic message is presented here of man's historical use of the land and its resources. One hundred years from now — if we are good stewards — the land will still be sustaining us with its many products, and the scenic beauties of the Big Sky Country will be undiminished.

It is BLM's hope that these photographs will add more to the understanding of long-term environmental changes and perhaps inspire others to pursue this kind of photographic documentation.



Michael J. Penfold
State Director

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ACKNOWLEDGEMENTS

This document was prepared under the direction of Michael J. Penfold, Montana State Director, Bureau of Land Management.

The concept of a historical photograph comparison to supplement the Mountain Foothills Grazing Management Environmental Impact Statement originated with Duane Whitmer, Range Conservationist at the Bureau of Land Management's Montana State Office.

Among those who made this work possible were the many Montana ranchers and farmers who graciously gave permission for access across private lands. Their assistance in photographic site location also is gratefully acknowledged.

Richard Burr, retired BLM Range Scientist, provided invaluable information and assistance in compiling available historic photography.

The Montana Historical Society made available some photographs from their historical file. They provided some invaluable help and assistance in making available the photography and write ups.

Roy Herseth, Park Manager, Montana Department of Fish, Wildlife, and Parks, and Pete Conklin, area rancher, supplied some additional photographs. They gave some invaluable assistance and information about the areas and in relocating the photography.

The U. S. Geological Survey Photographic Library Staff contributed immensely in compiling the historic survey photographs. Assistance in creation of this photograph comparison was generously given by BLM employees, the clerical staffs of the Bureau's Montana State Office, Division of Resources, and the MSO Text Processing Center.

To these contributors, and the many enthusiastic supporters who saw this project to its fruition, a most gracious thank you.

TABLE OF CONTENTS

Introduction

Page No.
1

List of Photographs and Their Location

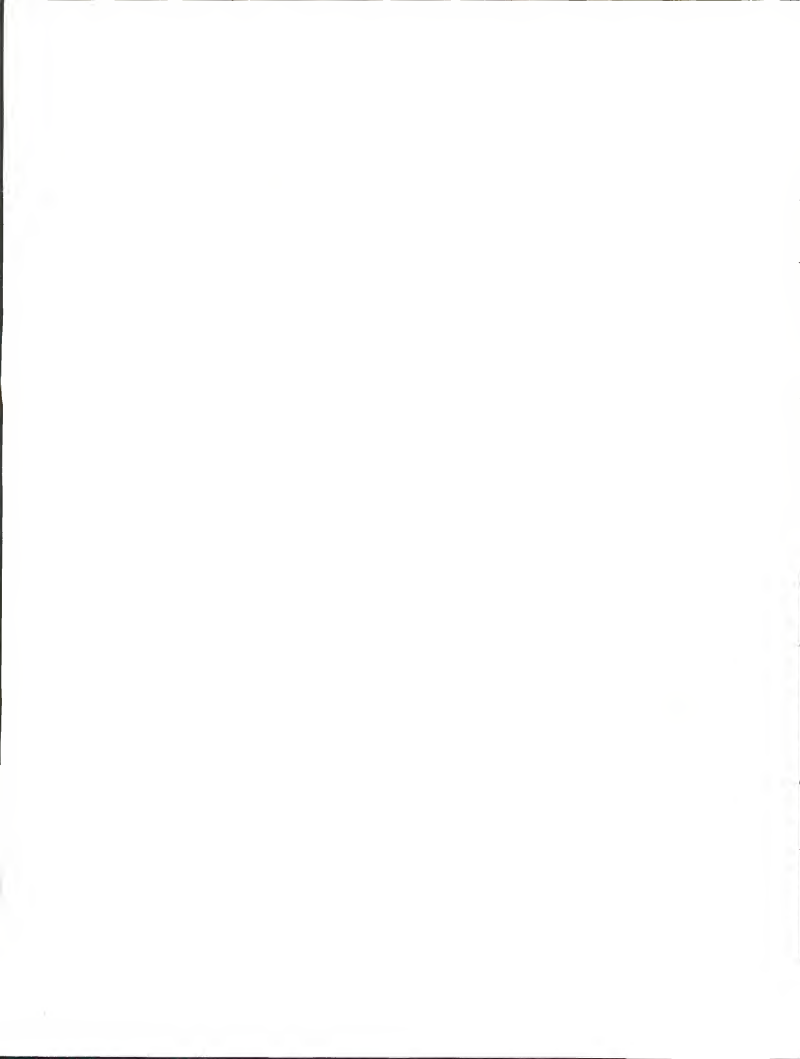
Location	Photo No.	Page No.
Dillon, Montana, Beaverhead County	75	2
Blacktail Mountains, Beaverhead County	76	4
Sawtooth Mountain, Beaverhead County	77	6
Beaverhead Valley, South of Dillon, Beaverhead County	78	8
Beaverhead Valley, North of Clark Canyon Dam, Beaverhead County	79	10
Red Rock Valley, Beaverhead County	80	12
Red Rock Valley, Beaverhead County	81	14
Red Rock Valley, Beaverhead County	82	16
Big Sheep Canyon Road, Beaverhead County	83	18
Big Sheep Canyon Mouth, Beaverhead County	84	20
Big Sheep Creek, Beaverhead County	85	22
Muddy Creek Basin, Beaverhead County	86	24
Benchland near Morrison Lake, Beaverhead County	87	26
Ridge top near Morrison Lake, Beaverhead County	88	28
Ridge top near Morrison Lake, Beaverhead County	89	30
Bannock City, Montana, Beaverhead County	90	32
Bannock City, Montana, Beaverhead County	91	34
Hill near Burma Road, Madison County	92	36
Near Sandy Hollow Road, Madison County	93	38
Box Springs, Madison County	94	40
Ridge top east of Melrose, Montana, Madison County	95	42
Tip of Shepard Mountain, Beaverhead County	96	44
Trapper Creek, Beaverhead County	97	46
Canyon Creek, Beaverhead County	98	48
Big Hole River Canyon, Silverbow County	99	50
Big Hole River near Maiden Rock, Silverbow County	100	52
Big Hole River near Maiden Rock, Silverbow County	101	54
Humbug Spires Primitive Area, Silverbow County	102	56
Big Hole River, Beaverhead County	103	58
Chalk Bluff, Deer Lodge County	104	60
Alder Gulch, Madison County	105	62
Gorge of Ruby Basin near dam, Madison County	106	64
Romy Lake, Madison County	107	66
Centennial Range, Beaverhead County	108	68
Centennial Range, Beaverhead County	109	70
Centennial Range, Beaverhead County	110	72
Centennial Range, Beaverhead County	111	74
Centennial Range, Beaverhead County	112	76
Road to Red Rock Pass, Beaverhead County	113	78
Antelope Basin, Beaverhead County	114	80
Antelope Basin, Beaverhead County	115	82
Little Mile Creek, Madison County	116	84
Mouth of Madison Canyon, Madison County	117	86
Madison River, Madison County	118	88



Madison River, Madison County	119	90
Mouth of Madison Canyon, Madison County	122	92
Indian Creek, Madison County	123	94
Near Bear Creek, Madison County	124	96
Washington Creek, Madison County	125	98
Madison Valley near Red Mountain, Madison County	126	100
Madison Valley, Madison County	127	102
Lower Elk Creek, Gallatin County	128	104
Jefferson River Gorge, Madison County	129	106
Highway to Twin Bridges, Madison County	130	108
Butte Hill, Silverbow County	131	110
Blackfoot City, Montana, Powell County	132	112
Blackfoot City, Montana, Powell County	133	114

Appendix

Map	115
Guide to Plant Names	116
Bibliography	119



INTRODUCTION

During the summer of 1978-79, the Montana State Office of the Bureau of Land Management, located in Billings, Montana, launched a special project of rephotographing various scenes in the Mountain Foothills Grazing Management Environmental Impact Statement to gain a better understanding of long term environmental changes.

Black and white prints were obtained from the U. S. Geological Survey (USGS) photographic library in Denver, Colorado. These photos were originally taken by USGS employees in conjunction with assigned field projects. Richard Burr, a retired BLM range scientist, searched out the old historical photos.

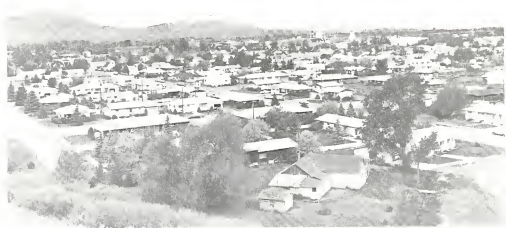
Additional black and white prints were obtained from the Montana Historical Society. They have some excellent old historical photography of Montana, taken by many different people who lived here.

A crown graphic camera, 4"x5" format, equipped with a 135mm lens, tripod and Kodak TXP 523 fast black and white film were used to obtain the 1978-79 photos. Most of these were taken at a shutter speed of 1/200 second with an operative setting of F-22.

A limiting factor in attempting to rephotograph any scene was the documentation of the original photo location. Photo descriptions and names were generally based on local physiographic features in usage at the time.

The photo numbers shown on the location map are the same numbers listed in the table of contents for quick reference.

Mike Gilkerson, Range Technician for the Division of Resources at BLM's Montana State Office, was given this unique assignment. Mr. Gilkerson kept a diary in which he noted directions to, and a brief description of, each site. His field notes are included with each photograph. He also developed a plant collection for each species encountered to assure correct identification.



UNKNOWN? (top)

Dillon from the East Bench in 1884. Montana Historical Society photograph.

GILKERSON, M. No. 75 (bottom)

Beaverhead County
T. 7 S., R. 8 W., Sec. 19
Facing Northwest

June 1979
Private Land

Retaken from East Bench near a new home. Needleandthread, bluebunch wheatgrass, fringed sagewort, winterfat and prickly pear cactus were noted on the bench top.



PARDEE, J. T. No. 1405 (top)

Benchland in front of mountains at south of Blacktail Valley. Beaverhead County, Montana.
July 21, 1937.

GILKERSON, M. No. 76 (bottom)

Beaverhead County
T. 9 S., R. 8 W., Sec. 15
Facing Southwest

July 1978
Private Land

Looking into Blacktail Mountains. Little change is noted. Needleandthread, prairie junegrass, thickspike wheatgrass, needleleaf sedge, and fringed sagewort were noted in the foreground.



ALDEN, W. C. No. 2016 (top)

Limestone buttresses west of Sawtooth Mountain on Blacktail Creek, 16 miles north of Monida, showing irregular weathering of upturned ledges. Beaverhead County, Montana. September 19, 1928.

GILKERSON, M. No. 77 (bottom)

Beaverhead County
T. 12 S., R. 6 W., Sec. 15
Facing East

June 1978
Public Land

Timber has increased on the mountain. The vegetation is sparse in the foreground due to cattle being trailed through to summer pastures. Bluebunch wheatgrass, sandberg bluegrass, prairie junegrass, needleleaf sedge, fringed sagewort, and big sagebrush were noted in the foreground.



ALDEN, W. C. No. 2166 (top)

Beaverhead Valley south of Dillon. Looking west over narrow inner gorge to worn-off upland.
Beaverhead County, Montana. September 16, 1930.

GILKERSON, M. No. 78 (bottom)

Beaverhead County
T. 9 S., R. 10 W., Sec. 12
Facing Northwest

July 1978
Private Land

Looking at Pipe Organ Rock, more timber is the only change noted. Bluebunch wheatgrass, prairie junegrass, sandberg bluegrass, needleandthread, big sagebrush, and prickly pear cactus were noted on the ridge.



ALDEN, W. C. No. 2167 (top)

Beaverhead Valley north of Armstead. View north showing stream meanders above the narrow rock gateway in distance. Beaverhead County, Montana. 1930.

GILKERSON, M. No. 79 (bottom)

Beaverhead County
T. 9 S., R. 10 W., Sec. 29
Facing Northeast

June 1978
Private Land

Looking down the Beaverhead River below the Clark Canyon Dam. Pipe Organ Rock is on the left side of the photograph. The bottom is irrigated hay land while needleandthread, bluebunch wheatgrass, prairie junegrass, fringed sagewort, and big sagebrush were noted on the ridge.



ALDEN, W. C. No. 2284 (top)

Red Rock Valley. Recent fault scarp at foot of abrupt mountain front, 4 miles west of Lima T. 14 S., R. 32 E. Notable triangular facet ends of spurs between gulches. Beaverhead County, Montana. August 21, 1936.

GILKERSON, M. No. 80 (bottom)

Beaverhead County
T. 14 S., R. 8 W., Sec. 7
Facing West

June 1978
Private Land

The extreme right side of this photograph can also be viewed in photograph No. 81. The vegetation in the foreground appears thicker. Needleandthread, prairie junegrass, bluebunch wheatgrass, Idaho fescue, fringed sagewort, and horsebrush were noted in the foreground.



ALDEN, W. C. No. 2282 (top)

Red Rock Valley — recent fault scarp at foot of abrupt mountains front, 4 miles west of Lima, T. 14 S., R. 32 E. Little Sheep Canyon at left (south). Beaverhead County, Montana. August 21, 1936.

GILKERSON, M. No. 81 (bottom)

Beaverhead County
T. 13 S., R. 9 W., Sec. 35
Facing Southwest

June 1978
County Road

Chute Canyon is on the right with Little Sheep Canyon on the left. In this photograph, where the road ends, a cattle lane continues for another mile. Kentucky bluegrass and smooth brome were the main species noted.



ALDEN, W. C. No. 2283 (top)

Red Rock Valley. Recent fault scarp at foot of abrupt mountain slope 4 miles west of Lima, T. 14 S., R. 13 E. at highest point the scarp is 100 feet high and is cut through by inner gulch. Slope of fan below is 6 to 9 degrees. Beaverhead County, Montana. 1936

GILKERSON, M. No. 82 (bottom)

Beaverhead County
T. 14 S., R. 9 W., Sec. 3
Facing Southeast

June 1978
Public Land

Hillside seen in photograph No. 82. Idaho fescue, bluebunch wheatgrass, sandberg bluegrass, fringed sagewort and horsebrush were noted on the hillside.



PARDEE, J. T. No. 1407 (top)

Recent fault scarp across alluvial plain, Mouth of Sheep Creek Canyon west of Lima. Beaverhead County, Montana. July 27, 1937.

GILKERSON, M. No. 83 (bottom)

Beaverhead County
T. 13 S., R. 9 W., Sec. 20
Facing West

June 1978
County Road

On Big Sheep Canyon Road looking into the mouth of Big Sheep Canyon. Note increase in timber and the height of the big sagebrush along the fence. The cottonwoods and willows have increased along the ditch and creek.



ALDEN, W. C. No. 2281 (top)

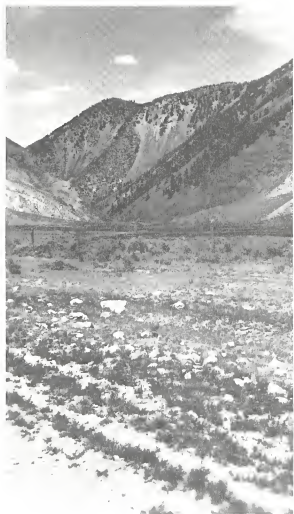
Recent fault scarp across the alluvial terrace at the mouth of Sheep Canyon, northwest of Lima. The trees are on the down faulted terrace below the scarp; the man is on the terrace above the scarp. Beaverhead County, Montana. August 21, 1936. Published as figure 40 in USGS professional paper 231. 1935.

GILKERSON, M. No. 84 (bottom)

Beaverhead County
T. 13 S., R. 9 W., Sec. 20
Facing Northwest

June 1978
Private Land

Very little change noted in the timber on the mountain, but a good increase of cottonwood, willows, and wild rose in foreground. Kentucky bluegrass, big sagebrush, white clover and western yarrow were noted in the foreground.



PARDEE, J. T. No. 1450 (top)

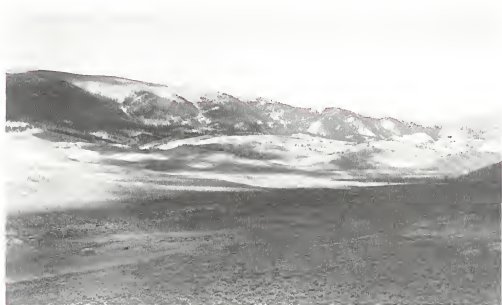
Gorge of Sheep Creek below Muddy Creek Basin, looking downstream. Beaverhead County, Montana. July 24, 1937.

GILKERSON, M. No. 85 (bottom)

Beaverhead County
T. 14 S., R. 10 W., Sec. 10
Facing East

August 1978
Public Land
County Road

Looking onto private land across fence into creek bottom. Height of sagebrush in foreground has increased. Needleandthread, bluebunch wheatgrass, sandberg bluegrass, western wheatgrass, and big sagebrush were noted on the roadside.



PARDEE, J. T. No. 1406 (top)

Muddy Creek Basin. Beaverhead County, Montana. July 27, 1937.

GILKERSON, M. No. 86 (bottom)

Beaverhead County
T. 13 S., R. 10 W., Sec. 33
Facing Northwest

June 1978
Public Land

Timber has appeared to have increased on mountains. Sagebrush appears to be about the same. Bluebunch wheatgrass, Indian ricegrass, fringed sagewort, and big sagebrush were noted on the ridge.



ROSS, C. P. No. 2187 (top)

The Mississippian beds near Morrison Lake, Beaverhead Mountains, taken from near where the branch road to the lake starts. Montana. August 25, 1947.

GILKERSON, M. No. 87 (bottom)

Beaverhead County
T. 14 S., R. 11 W., Sec. 19
Facing West

June 1978
Private Land

Private land had been sprayed about 10 years ago for sagebrush. Kentucky bluegrass, smooth brome, Idaho fescue, dandelion, and locoweed were noted in the foreground.



ROSS, C. P. No. 2184 (top)

Contorted Mississippian rocks near Morrison Lake, Beaverhead Mountain, Montana
August 25, 1947.

GILKERSON, M. No. 88 (bottom)

Beaverhead County
T. 14 S., R. 12 W., Sec. 25
Facing West

June 1978
Public Land

Taken about half the way up the ridge. Morrison Lake is over the ridge in the background.
Bluebunch wheatgrass, prairie junegrass, and Idaho fescue were noted on the ridge.



ALDEN, W. C. No. 2168 (top)

Beaverhead Range, west of Lima. View looking west to cirques below the Continental Divide at the head of Sheep Creek Basin. Beaverhead County, Montana. September 19, 1930.

GILKERSON, M. No. 89 (bottom)

Beaverhead County
T. 14 S., R. 12 W., Sec. 24
Facing West

June 1978
Public Land

Little evidence of change is noted except a few more plants. Idaho fescue, bluebunch wheatgrass, and fringed sagewort were noted in the foreground.



UNKNOWN? (top)

Bannock City, Montana about 1880. Photograph furnished by Roy Herseth, Park Manager, Montana Department of Fish, Wildlife, and Parks.

GILKERSON, M. No. 90 (bottom)

Beaverhead County
T. 8 S., R. 11 W., Sec. 7
Facing Northeast

June 1979
Public Land

Note the increase of timber in the hills and along Grasshopper Creek. Area was heavily mined for gold. Idaho fescue, bluebunch wheatgrass, and big sagebrush were noted in the foreground.



UNKNOWN? (top)

Bannock City, Montana about 1900. The dredge had been launched in 1895 and can be seen in the left of the photograph. Montana Historical Society photograph.

GILKERSON, M. No. 91 (bottom)

Beaverhead County
T. 8 S., R. 11 W., Sec. 7
Facing West

June 1979
Public Land

Note the increase in willows along the creek. Idaho fescue, bluebunch wheatgrass, and big sagebrush were noted in the foreground.



RICHARDS, R. W. No. 258 (top)

Hill on which R405 prospect is located from point to south in Sec. 3 T. 5 S., R. 8 W. The beds to the left are made up of the chert which normally overlies the phosphate and the rocks of the lower cliffs are Kootenai (?) so that the section rises in both directions across the strike from the phosphate; the fault lies close under the higher cliff and cuts out the phosphate in many places. Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 92 (bottom)

Madison County
T. 5 S., R. 8 W., Sec. 3
Facing East

July 1978
Private Land

The foreground is now an irrigated hay field. The Burma Road runs along the base of the hill. Alfalfa and common oats were noted in the foreground.



RICHARDS, R. W. No. 257 (top)

Tip of anticlinal fold as shown by ledges in Kootenai (?), looking north from R417, section 26, T. 4 S., R. 8 W., Madison County, Montana. n.d. circa 1910.

GILKERSON, M. No. 93 (bottom)

Madison County
T. 4 S., R. 8 W., Sec. 27
Facing North

July 1978
Public Land

Little change is evident since Richards took the original photograph. Blue grama, sandberg bluegrass, bluebunch wheatgrass, needleandthread, Indian ricegrass, fringed sagewort, big sagebrush, and prickly pear cactus were noted.



RICHARDS, R. W. No. 259 (top)

Southwest from S¼ corner section 15, T. 4 S., R. 8 W. through gap in Cretaceous and Permian (?) sediments toward Table Mountain (andesitic flows) with Ruby Range in distance. Madison County, Montana. n.d. circa 1910.

GILKERSON, M. No. 94 (bottom)

Madison County
T. 4 S., R. 8 W., Sec. 15
Facing Southeast

July 1978
Public Land

Taken at the head of Box Springs. The clump of trees left of center are willows, the rest are juniper. Blue grama, needleandthread, western wheatgrass, Indian ricegrass, foxtail barley, fringed sagewort, big sagebrush and prickly pear cactus were noted in the foreground.



STONE, R. W. No. 498 (top)

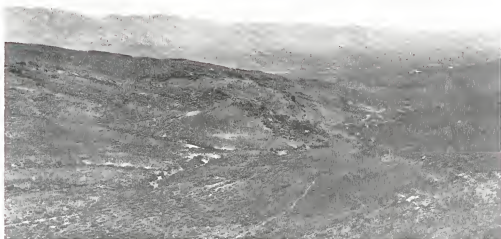
Sec. 33, T. 2 S., R. 8 W., view southeast from northeast corner. Ridges of tilted Madison limestone east of Melrose, Montana. n.d. circa 1910.

GILKERSON, M. No. 95 (bottom)

Madison County
T. 2 S., R. 8 W., Sec. 29
Facing Southeast

July 1978
Public Land

This photograph is way out of line in the foreground, but close in the background. Mountain mohogany appears to be increasing in the background. Needleandthread, bluebunch wheatgrass, Indian ricegrass, winterfat, fringed sagewort and big sagebrush were noted in the foreground.



RICHARDS, R. W. No. 256 (top)

Tip of Shepherd Mountain anticline as shown by trace of the grey limestone immediately below the "gastropod limestone" from R. 10, Sec. 21, T. 2 S., R. 9 W., Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 96 (bottom)

Beaverhead County
T. 2 S., R. 9 W., Sec. 21
Facing Southeast

July 1978
Public Land

Little change is evident since Richards took the original photograph. Bluebunch wheatgrass, needleandthread, fringed sagewort, and big sagebrush were noted in the foreground.



RICHARDS, R. W. No. 251 (top)

View south from R378 up Trapper Creek from near the head of Trapper Canyon. Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 97 (bottom)

Beaverhead County
T. 2 S., R. 10 W., Sec. 30
Facing South

July 1978
Forest Service Land

Timber was logged off in background due to mining activity. Notice how it has restored itself throughout the whole photograph. Idaho fescue, green needlegrass, prairie junegrass, bluebunch wheatgrass, fringed sagewort, and big sagebrush were noted farther down the slopes. Douglas fir was the predominant tree noted.



RICHARDS, R. W. No. 254 (top)

Northwest from station at 6,700 feet elevation on ridge in NW¼ section 15, T. 2 S., R. 10 W., looking up Canyon Creek. Shows Devils' Basin road to Wise River and road to Vipond Park, complicated structure in Paleozoic and Mesozoic rocks, and moraines in valley. Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 98 (bottom)

Beaverhead County
T. 2 S., R. 10 W., Sec. 15
Facing Northwest

July 1978
Forest Service Land

Note the increase of timber in the photograph. Prairie junegrass, fringed sagewort, and western yarrow were identified among the many forbs on this hillside.



RICHARDS, R. W. No. 244 (top)

Big Hole River Canyon and Shepherd Mountain R27, NW¼, section 9, T. 2 S., R. 9 W.,
Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 99 (bottom)

Silverbow County
T. 2 S., R. 9 W., Sec. 9
Facing Southwest

July 1978
Public Land

The timber appears to have increased on the hillside. The Big Hole River appears to have a more definite channel now. Bluebunch wheatgrass, needleandthread, fringed sagewort, big sagebrush, green rabbitbrush, and prickly pear cactus were noted on the ridge.



RICHARDS, R. W. No. 242 (top)

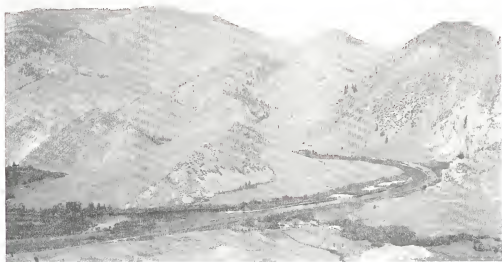
Incised meander of the Big Hole River at Maiden Rock. The trace of the phosphate horizon and the character of the synclinal basin is well shown. Panorama taken in a northwest direction from station 40 section 4, T. 2 S., R. 9 W., Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 100 (bottom)

Silverbow County
T. 2 S., R. 9 W., Sec. 4
Facing West

July 1978
Public Land

Looking down on the Big Hole River near Maiden Rock. Note increase of timber on ridges in background. Bluebunch wheatgrass, prairie junegrass, Idaho fescue, western yarrow, and green rabbitbrush were noted on the ridge.



RICHARDS, R. W. No. 243 (top)

Incised meander of the Big Hole River at Maiden Rock. The trace of the phosphate horizon and the character of the synclinal basin are well shown. Panorama taken in a northwest direction from station R40, section 4, T. 2 S., R. 9 W., Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 101 (bottom)

Silverbow County
T. 2 S., R. 9 W., Sec. 4
Facing Northwest

July 1978
Public Land

Retaken on same spot as No. 100. Shows more of Big Hole River and mining activity. Note increase in timber. Bluebunch wheatgrass, prairie junegrass, Idaho fescue, western yarrow, and green rabbitbrush were noted on the ridge.



ALDEN, W. C. No. 2298 (top)

Highlands northeast of Divide. Erosion pinnacles or jointed and weathered granite. Silverbow County, Montana. September 2, 1936.

GILKERSON, M. No. 102 (bottom)

Silverbow County
T. 1 S., R. 9 W., Sec. 11
Facing Northeast

July 1978
Public Land

Humbug Spires Primitive Area. Note increase in timber. Idaho fescue, prairie junegrass, Kentucky bluegrass, Indian ricegrass, needleandthread, western yarrow, mountain mahogany, and juniper were among the major species noted.



RICHARDS, R. W. No. 245 (top)

Easterly from point in NW $\frac{1}{4}$, section 1, T. 1 S., R. 11 W., Big Hole River, Beaverhead County, Montana. n.d. circa 1910.

GILKERSON, M. No. 103 (bottom)

Beaverhead County
T. 1 S., R. 11 W., Sec. 2
Facing East

July 1978
Private Land

Big Hole River. Note increase in the cottonwoods along the river. Idaho fescue, sandberg bluegrass, prairie junegrass, needleandthread, fringed sagewort, big sagebrush, and green rabbitbrush were noted on the ridge.



ALDEN, W. C. No. 2300 (top)

Big Hole Basin—Tertiary "lake beds" near bridge (T. 1 N., R 14 W.) 6 miles southwest of Fishtrap post office. Semi-indurated sandy clay strata dipping northwest, beveled top overlain by quartzite bench gravel. Deer Lodge County, Montana. September 4, 1936.

GILKERSON, M. No. 104 (bottom)

Deer Lodge County
T 1 N., R. 14 W., Sec. 14
Facing East

June 1979
Private Land

Little change in vegetation noted except growth in timber. Bluebunch wheatgrass, fringed sagewort, and big sagebrush were noted in the foreground.



CONDIT, D. D. No. 205 (top)

The path of the gold dredge. Alder Gulch below Virginia City, Madison County, Montana. 1916.

GILKERSON, M. No. 105 (bottom)

Madison County
T. 6 S., R. 3 W., Sec. 8
Facing South

July 1978
Private Land

Highway right-of-way about 1 mile northwest of Nevada City. Note increase of willows and cottonwoods on the old trailings. Timothy, crested wheatgrass, slender wheatgrass, Kentucky bluegrass, red clover, big sagebrush, and wild rose were noted along the roadside.



PARDEE, J. T. No. 1584 (top)

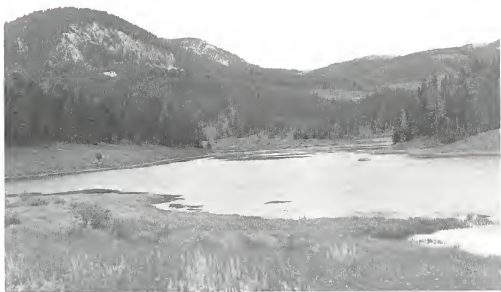
Gorge of Ruby Basin below Ruby Basin. Madison County, Montana. July 5, 1940.

GILKERSON, M. No. 106 (bottom)

Madison County
T. 7 S., R. 4 W., Sec. 8
Facing North

July 1978
Highway Right-of-Way

Taken near Ruby River Reservoir Dam looking down the canyon. Little change is noted. Prairie junegrass, needleandthread, bluebunch wheatgrass, Indian ricegrass, slender wheatgrass, horsebrush, fringed sagewort, and big sagebrush were noted along the highway.



CONDIT, D. C. No. 201 (top)

Near headwaters of Warm Springs Creek. Steep rock slopes to left are Paleozoic limestone with Quadrant quartzite along mountain front. T. 8 S., R. 3 W., Madison County, Montana.
1916

GILKERSON, M. No. 107 (bottom)

Madison County
T. 8 S., R. 3 W., Sec. 26
Facing Northeast

July 1978
Forest Service Land

Romy Lake. Note decrease of willows along the shoreline, but increase of timber. The area has been logged. Timothy, sandberg bluegrass, fringed sagewort, western yarrow, dandelion, and wild strawberry were noted in the foreground.



ALDEN, W. C. No. 2112 (top)

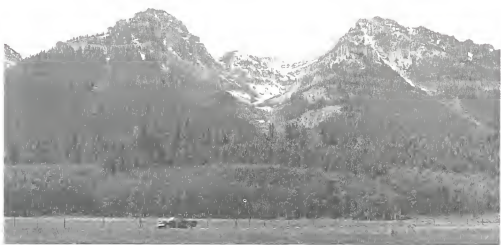
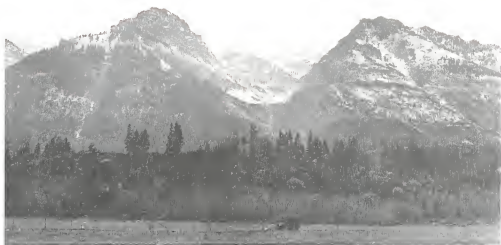
Centennial Range from west. Beaverhead County, Montana. September 24, 1929.

GILKERSON, M. No. 108 (bottom)

Beaverhead County
T. 14 S., R. 3 W., Sec. 29
Facing East

June 1979
Private Land

Little change noted except an increase in the timber. Prairie junegrass, Idaho fescue, bluebunch wheatgrass, fringed sagewort, and big sagebrush were noted in the foreground.



ALDEN, W. C. No. 2113 (top)

Centennial Range, west of Lakeview, southwest of upper Red Rock Lake. Looking south to high cirque, wooden moraine on piedmont terrace in foreground. Beaverhead County, Montana. September 25, 1929.

GILKERSON, M. No. 109 (bottom)

Beaverhead County
T. 14 S., R. 1 W., Sec. 28
Facing South

June 1979
Wildlife Refuge

Note the increase in timber. Smooth brome, bluebunch wheatgrass, timothy, dandelion, and western yarrow were identified.



ALDEN, W. C. No. 2114 (top)

Centennial Range, west of Lakeview, southwest of upper Red Rock Lake. Looking south to high cirque; wooded moraine on piedmont terrace in foreground. Beaverhead County, Montana. September 25, 1929.

GILKERSON, M. No. 110 (bottom)

Beaverhead County
T. 14 S., R. 1 W., Sec. 27
Facing South

June 1979
Wildlife Refuge

Little change noted except increase in the timber in the foreground. Bluebunch wheatgrass, smooth brome, Idaho fescue, dandelion, western yarrow, scrufpea, and big sagebrush were noted.



ALDEN, W. C. No. 2030 (top)

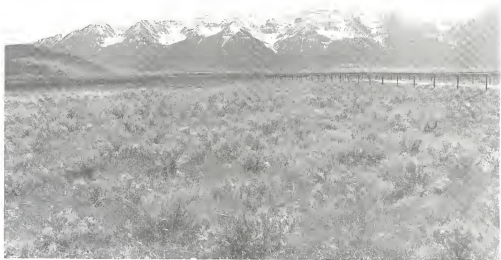
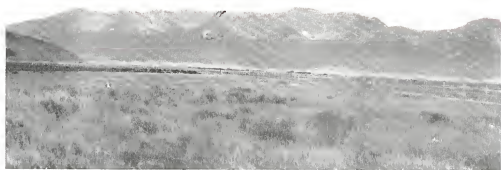
Centennial Range, east of Red Rock Lake; view south showing glacial cirques. Beaverhead County, Montana. June 11, 1929.

GILKERSON, M. No. 111 (bottom)

Beaverhead County
T. 14 S., R. 1 E., Sec. 19
Facing South

June 1979
Wildlife Refuge

Along road east of upper Red Rock Lake. Sandberg bluegrass and silver sagebrush were noted along the road.



ALDEN, W. C. No. 2372 (top)

Centennial Range (north front, fault-line scarp), showing glacial cirques from gravelly flat east of Red Rock Lakes. Glacial moraines at lower edge of woods. Madison County, Montana. August 22, 1938.

GILKERSON, M. No. 112 (bottom)

Beaverhead County
T. 14 S., R. 1 E., Sec. 6
Facing South

June 1979
Wildlife Refuge

Looking back to the Centennial Mountains from northeast of upper Red Rock Lake. Green needlegrass, smooth brome, prairie sandreed, sandberg bluegrass, green rabbitbrush, big sagebrush, dandelion, and western yarrow were identified among the many grasses and forbs present.



PARDEE, J. T. No. 1376 (top)

Mountains at south of Centennial Valley, straight front and oversteepened. Beaverhead County, Montana. August 22, 1936.

GILKERSON, M. No. 113 (bottom)

Beaverhead County
T 14 S., R. 1 E., Sec. 16
Facing East

June 1979
State Land

Little change noted except road has been improved. Big sagebrush was noted along the road.



UNKNOWN? (top)

Mr. Pete Conklin had this photograph and was kind enough to loan it for reproduction. It was taken about 1910. He gave a history of the area which was near where his father homesteaded. The buffalo are part of a little herd owned by a local rancher near Henry's Lake. They would get loose and roam the country at will. This particular bunch is in Antelope Basin which is west of Reynolds Pass and south of the Madison River. Different ranchers in the area of the Madison Valley had small herds of buffalo from time to time. The buffalo would roam the country when they got loose but were herded back to ranches when time permitted. Forest Service Land, Madison County, Montana, circa 1910.

GILKERSON, M. No. 114 (bottom)

Beaverhead County
T 13 S., R. 2 E., Sec. 8
Facing Northeast

September 1978
Forest Service Land

Due to the weather, the retake is not on the exact point. Note the increase in timber and sagebrush. Idaho fescue, prairie junegrass, western wheatgrass, threadleaf sedge, and big sagebrush were noted in the foreground.



UNKNOWN? (top)

Mr. Pete Conklin had this photograph and was kind enough to loan it for reproduction. It was taken about 1910. He gave a history of the area which was near where his father homesteaded. The rider in the photograph is his father. The buffalo are part of a little herd owned by a local rancher near Henry's Lake. They would get loose and roam the country at will. This particular bunch is in Antelope Basin which is west of Reynolds Pass and south of the Madison River. Different ranchers in the area of the Madison Valley had small herds of buffalo from time to time. The buffalo would roam the country when they got loose but were herded back to ranches when time permitted. Forest Service Land. Madison County, Montana. circa 1910.

GILKERSON, M. No. 115 (bottom)

Beaverhead County
T. 13 S., R. 2 E., Sec. 9
Facing Northwest

September 1978
Forest Service Land

Due to the weather, the retake is not on the exact point. Note the slight increase in the timber and sagebrush. Idaho fescue, prairie junegrass, western wheatgrass, threadleaf sedge, arrowleaf balsamroot, and big sagebrush were noted in the foreground.



PARDEE, J. T. No. 1545 (top)

Glaciated valley and fault scarp. West front of Madison Range at Little Mile Creek. Madison County, Montana. August 19, 1939.

GILKERSON, M. No. 116 (bottom)

Madison County
T. 12 S., R. 2 E., Sec. 27
Facing East

June 1979
Highway Right-of-Way

Retaken from highway looking over the fence. Little change noted except an increase in timber. Sandberg bluegrass, hairy brome, Idaho fescue, scruplea, and big sagebrush were noted in the foreground.



CONDIT, D. D. No. 163 (top)

U. S. Geological Survey outfit, mouth of Madison Canyon. Aglonkian rocks. T. 11 S., R. 2 E.,
Madison County, Montana. 1916

GILKERSON, M. No. 117 (bottom)

Madison County
T. 11 S., R. 2 E., Sec. 35
Facing East

July 1978
River Bed of Madison River

Due to the landslide in 1959, the stream channel and roads were all changed. Quake Lake is
behind the slide area. No vegetation was identified in the foreground.



CONDIT, D. D. 164 (top)

Panoramic view south across Madison River towards Reynolds Pass from near mouth of canyon, showing terraces of Madison River. T. 11 S., R. 2 E., Madison County, Montana. 1916.

GILKERSON, M. No. 118 (bottom)

Madison County
T 11 S., R. 2 E. Sec. 35
Facing Southeast

July 1978
Highway Right-of-Way

Looking across the Madison River below Quake Lake. Due to the earthquake in 1959, the river bottom has changed. Needleandthread, sandberg bluegrass, orchardgrass, big sagebrush, silver sagebrush, western yarrow, and wild onion were noted along the highway.



CONDIT, D. D. No. 165 (top)

Panoramic view south across Madison River toward Reynolds Pass from near mouth of canyon, showing terraces of Madison River. T 11 S., R. 2 E., Madison County, Montana. 1916.

GILKERSON, M. No. 119 (bottom)

Madison County
T. 11 S., R. 2 E., Sec. 35
Facing South

July 1978
Highway Right-of-Way

Looking across Madison River below Quake Lake. Due to the earthquake in 1959, the river bottom has changed. Needleandthread, sandberg bluegrass, orchardgrass, big sagebrush, silver sagebrush, western yarrow, and wild onion were noted along the highway.



PARDEE, J. T. No. 1474 (top)

Recent fault scarp. Looking east from Madison Valley. Madison Range and Canyon in background. Madison County, Montana. August 13, 1938.

GILKERSON, M. No. 122 (bottom)

Madison County
T. 12 S., R. 2 E., Sec. 2
Facing Northeast

June 1979
Private Land

The ridge in the right foreground is the photograph point. In the canyon is the slide from the earthquake of 1959. Idaho fescue, bluebunch wheatgrass, daisy, and big sagebrush were noted in the foreground.



ALDEN, W. C. No. 1887A (top)

Madison Range, recent fault (50-100 feet high) crossing alluvial fan (right fore), view south along the scarp (to left of buildings) and across Indian Creek to terminal moraine of south fork glacier. Wedge Mountain at back. Three Forks quadrangle, Madison County, Montana. September 21, 1927.

GILKERSON, M. No. 123 (bottom)

Madison County
T. 8 S., R. 1 E., Sec. 27
Facing Northeast

July 1978
Private Land

Little change is noted except the timber and trees in the foreground. The area is a winter range for wildlife along the foot of the mountains. Prairie junegrass, sandberg bluegrass, bluebunch wheatgrass, needleandthread, basin wildrye, fringed sagewort, cudweed sagewort, and western yarrow were noted in the foreground.



ALDEN, W. C. No. 1883 (top)

Madison Range west of Cameron, shows recent fault scarp (dark line at left above grove) cutting mountain foot slope. Landslide at right back of barns. Three Forks quadrangle, Madison County, Montana. September 21, 1927.

GILKERSON, M. No. 124 (bottom)

Madison County
T. 7 S., R. 1 E., Sec. 28
Facing East

July 1978
Private Land

Little change is noted except for the timber, and the pasture is in better condition. Kentucky bluegrass, timothy, foxtail barley, alfalfa, and red clover were noted in the foreground.



PARDEE, J. T. 1546 (top)

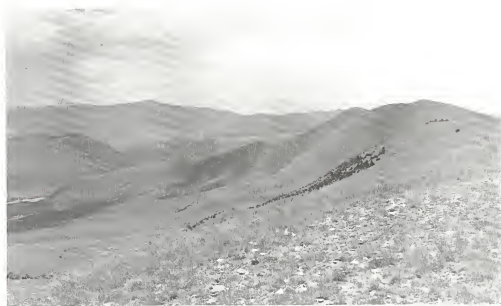
Outcrops of jointed granite. North of Meadow Creek Valley, Madison County, Montana.
August 20, 1939.

GILKERSON, M. No. 125 (bottom)

Madison County
T. 4 S., R. 2 W., Sec. 10
Facing Northeast

July 1978
Private Land

Note spoil piles from gold dredging along Washington Creek in the right center of the photograph. Thickspike wheatgrass, timothy, Kentucky bluegrass, bluebunch wheatgrass, needleandthread, fringed sagewort, cudweed sagewort, and western yarrow were noted.



ALDEN, W. C. No. 1879 (top)

Madison Valley 20+ miles south of Three Forks; high gravel terrace over Bozeman (Tertiary) "lake beds" (right 1,100 feet above river at left). Rhyolite hill at right, Madison mountain range left back, lower Madison canyon, middle, east of Norris. Madison County, Montana. September 17, 1927.

GILKERSON, M. No. 126 (bottom)

Madison County
T. 2 S., R. 1 E., Sec. 23
Facing Southwest

July 1978
Private Land

Looking toward Red Mountain. The camera is higher than Alden's. Prairie junegrass, bluegrama, bluebunch wheatgrass, needleandthread, fringed sagewort, and lupine were noted on the ridge.



ALDEN, W. C. No. 1876 (top)

Madison River Valley 20+ miles south of Three Forks showing high gravel terrace (1,000 feet up Bevellings Bozeman "lake beds") second terrace, low terrace and inner gorge cut in Archean gneiss. Madison County, Montana. September 16, 1927.

GILKERSON, M. No. 127 (bottom)

Gallatin County
T. 2 S., R. 2 E., Sec. 18
Facing Northwest

July 1978
Private Land

Madison River near highway to Bozeman. Little change has occurred except for a few more juniper and mountain mahogany in the foreground. Bluebunch wheatgrass, prairie junegrass, sandberg bluegrass, needleandthread, cheatgrass, fringed sagewort, green rabbitbrush, mountain mahogany, and juniper were noted.



UNKNOWN? (top)

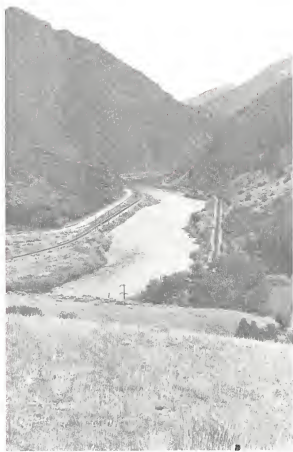
Cattle on lower Elk Creek near Madison River, Montana 1916. Montana Historical Society photograph.

GILKERSON, M. No. 128 (bottom)

Gallatin County
T. 2 S., R. 2 E., Sec. 22
Facing North

June 1979
Private Land

Elk Creek has changed course. Note the slight increase in timber. Western wheatgrass, prairie junegrass, bluebunch wheatgrass, Idaho fescue, needleandthread, phlox, fringed sagewort, silver sagebrush, locoweed, and western yarrow were noted on the ridge.



PARDEE, J. T. No. 1392 (top)

Gorge of Jefferson River. East of Cardwell. Pre-Cambrian (Belt) arkose and conglomerate.
Madison County, Montana. July 16, 1937.

GILKERSON, M. No. 129 (bottom)

Madison County
T. 1 N., R. 3 W., Sec. 12
Facing East

June 1979
Private Land

Little change noted in the photographs. Blue grama bottlebrush squirreltail, junegrass, needleandthread, sandberg bluegrass, fringed sagewort, and prickly pear cactus were noted in the foreground.



PARDEE, J. T. No. 972 (top)

Dry timberline on west slope of Tobacco Root Range, Jefferson Valley in foreground. Madison and Jefferson Counties, Montana. August 29, 1925.

GILKERSON, M. No. 130 (bottom)

Madison County
T. 1 S., R. 5 W., Sec. 20
Facing South

July 1978
Highway Right-of-Way

Retaken about 1 mile above the Whitehall to Twin Bridges road. Jefferson River in middle of photograph. Cheatgrass, bluegrama, sandberg bluegrass, needleandthread, and cudweed sagewort were noted along the highway.



PARDEE, J. T. No. 370 (top)

The Butte—eroded neck of a Tertiary rhyolite volcano, at the west of the City of Butte. View from the south. Silverbow County, Montana. August 5, 1917.

GILKERSON, M. No. 131 (bottom)

Silverbow County
T. 3 N., R. 8 W., Sec. 15
Facing North

June 1979
Private Land

Butte Hill. Photograph on old spoil piles west of the Montana School of Mines. Needleandthread, bluebunch wheatgrass, and horsebrush were noted in the foreground.



UNKNOWN? (top)

Blackfoot City, Montana in 1865. Montana Historical Society photograph.

GILKERSON, M. No. 132 (bottom)

Powell County
T. 11 N., R. 8 W., Sec. 25
Facing Northwest

June 1979
Private Land

Retaken to the east of the original photo site. Notice the increase in the timber. Idaho fescue, prairie junegrass, western yarrow, Douglas fir, cottonwood, and quaking aspen were noted in the foreground.



UNKNOWN? (top)

Blackfoot City, Montana about 1865 or 1866. Montana Historical Society photograph.

GILKERSON, M. No. 133 (bottom)

Powell County
T. 11 N., R. 8 W., Sec. 25
Facing South

June 1979
Public Land

Retaken east of original photograph point due to the increase of timber on the hillside.
Bluebunch wheatgrass and Idaho fescue were identified.



PHOTO NO. 75-133
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

GUIDE TO PLANT NAMES

GRASS AND GRASS LIKE

Common	Scientific
Crested wheatgrass	<u>Agropyron cristatum</u>
Thickspike wheatgrass	<u>Agropyron dasystachyum</u>
Slender wheatgrass	<u>Agropyron trachycaulum</u>
Western wheatgrass	<u>Agropyron smithii</u>
Bluebunch wheatgrass	<u>Agropyron spicatum</u>
Common oats	<u>Avena sativa</u>
Blue grama	<u>Bouteloua gracilis</u>
Hairy brome	<u>Bromus commutatus</u>
Smooth brome	<u>Bromus inermis</u>
Cheatgrass	<u>Bromus tectorum</u>
Prairie sandreed	<u>Calamovilfa longifolia</u>
Needleleaf sedge	<u>Carex eleocharis</u>
Threadleaf sedge	<u>Carex filifolia</u>
Orchardgrass	<u>Dactylis glomerata</u>
Basin wildrye	<u>Elymus cinereus</u>
Idaho fescue	<u>Festuca idahoensis</u>
Foxtail barley	<u>Hordeum jubatum</u>
Prairie junegrass	<u>Koeleria cristata</u>
Indian ricegrass	<u>Oryzopsis hymenoides</u>
Timothy	<u>Phleum pratense</u>
Kentucky bluegrass	<u>Poa pratensis</u>
Sandberg bluegrass	<u>Poa sandbergii</u>
Bottlebrush squirreltail	<u>Sitanion hystrix</u>
Needleandthread	<u>Stipa comata</u>
Green needlegrass	<u>Stipa viridula</u>
Red clover	<u>Trifolium pratense</u>
White clover	<u>Trifolium repens</u>

GUIDE TO PLANT NAMES

FORBS

Common	Scientific
Western yarrow	<u>Achillea millifolium</u>
Wild onion	<u>Allium spp.</u>
Locoweed	<u>Astragalus spp.</u>
Arrowleaf balsamroot	<u>Balsamorhiza saquittata</u>
Daisy	<u>Erigeron spp.</u>
Wild strawberry	<u>Fragaria americana</u>
Lupine	<u>Lupinus spp.</u>
Alfalfa	<u>Medicago sativa</u>
Phlox	<u>Phlox spp.</u>
Scrufpea	<u>Psoralea spp.</u>
Dandelion	<u>Taraxacum officinale</u>

GUIDE TO PLANT NAMES

SHRUBS AND TREES

Common	Scientific
Silver sagebrush	<u>Artemisia cana</u>
Fringed sagewort	<u>Artemisia frigida</u>
Cudweed sagewort	<u>Artemisia ludoviciana</u>
Big sagebrush	<u>Artemisia tridentata</u>
Winterfat	<u>Ceratoides lanata</u>
Green rabbitbrush	<u>Chrysanthamnus viscidiflorus</u>
Juniper	<u>Juniperus spp.</u>
Prickly pear cactus	<u>Opuntia polyacantha</u>
Wild rose	<u>Rosa spp.</u>
Willow	<u>Salix spp.</u>
Horsebrush	<u>Tetradymia canescens</u>
Curleaf mountain mahogany	<u>Cercocarpus ledifolius</u>
Cottonwood	<u>Populus spp.</u>
Quaking aspen	<u>Populus tremuloides</u>
Douglas fir	<u>Pseudotsuga menziesii</u>

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